

Appendix 1

To the Programme Regulations 2011 of the
Joint Master's degree programme in High Energy Physics

12 April 2011 (Version: 01 September 2019)

Applies to students who commence the degree programme in Autumn Semester 2020 or later.

This English translation is for information purposes only. The original German version is the legally binding document.

This appendix sets out the prerequisites for and further details regarding admission to the Joint Master's degree programme in High Energy Physics. It supplements the stipulations of the Admission Regulations of ETH Zurich and the Directive on Admission to Master's Degree Programmes.

Contents

1 Profile of requirements

- 1.1 Degree qualifications
- 1.2 Academic prerequisites
- 1.3 Language prerequisites
- 1.4 Performance prerequisites

2 Specific stipulations for admission and entering the degree programme

- 2.1 General regulations
- 2.2 Application with a Bachelor's degree from ETH Zürich
- 2.3 Application with a Bachelor's degree from another university

3 Application and admission procedure

1 Profile of requirements

Policy

For admission to the Joint Master's degree programme in High Energy Physics (subsequently 'the degree programme') all of the following prerequisites must be satisfied.

1.1 Degree qualifications

¹ For admission to the degree programme one of the following is required:

- a. a university Bachelor's degree in Physics comprising at least 180 ECTS¹ credits or an equivalent university degree in Physics
- b. a university Bachelor's degree comprising at least 180 ECTS credits or an equivalent university degree in a discipline whose content covers the prerequisites listed below

² A Bachelor's degree qualifies its holder for admission to an ETH Master's degree programme only if it also qualifies said holder to enter, without additional requirements, the desired Master's degree programme within the university system where the Bachelor's degree was acquired. The Rector may also demand proof of this, determining whether such proof must come from the home university or from another university in the country where the Bachelor's degree was acquired.

1.2 Academic prerequisites

¹ Attendance of the Joint Master's degree programme in High Energy Physics presupposes basic knowledge and competences in the disciplines of Mathematics and Physics which are in content, scope and quality equivalent to those covered in the ETH Bachelor's degree programme in Physics (discipline requirements profile).

² The **discipline requirements profile** is based on knowledge and competences covered in the ETH Bachelor's degree programme in Physics. This includes training in the relevant methodological scientific thinking and in experimental competence.

³ The discipline requirements profile is structured in two parts, as follows. Details regarding the content of the corresponding course units are published in the course catalogue (www.courses.ethz.ch).

¹ ECTS: European Credit Transfer System. Credits describe the average time expended to achieve a learning goal. One credit corresponds to 30 hours of work.

Part 1: Basic knowledge and competences

Part 1 covers basic knowledge from the disciplines Mathematics and Physics. The substance of the following course units from the ETH Bachelor's degree programme in Physics is required:

Mathematics

- Analysis I
- Analysis II
- Lineare Algebra [Linear Algebra] I
- Lineare Algebra II
- Numerische Methoden [Numerical Methods]
- Informatik [Computer Science]
- Funktionentheorie [Complex Analysis]
- Methoden der mathematischen Physik [Methods of Mathematical Physics] I
- Methoden der mathematischen Physik II

Physics

- Mechanik und Wärme [Mechanics and Heat]
- Schwingungen und Wellen [Oscillations and Waves]
- Elektrizität und Magnetismus [Electricity and Magnetism]
- QuantenPhysik [Quantum Physics]

Practicals, proseminars, semester theses

The following are required:

- Physics practicals
- Semester thesis projects (experimental or theoretical) and proseminars

Part 2: Subject-specific knowledge and competences

Part 2 covers specific knowledge in the discipline of Physics. The substance of the following course units from the ETH Bachelor's degree programme in Physics is required:

Theoretical Physics

- Allgemeine Mechanik [General Mechanics]
- Elektrodynamik [Electrodynamics]
- Quantenmechanik [Quantum Mechanics] I
- * Quantenmechanik II
- * Theorie der Wärme [Theory of Heat]
- * Kontinuumsmechanik [Continuum Mechanics]

Experimental Physics

- * Astrophysik [Astrophysics]
- * Festkörperphysik [Solid State Physics]
- * Kern- und Teilchenphysik [Nuclear and Particle Physics]
- * Quantenelektronik [Quantum Electronics]

From the course unit groups marked with an asterisk (*) the content of at least four course units is required, of which two must belong to Experimental Physics and at least one must belong to Theoretical Physics. Students who lack knowledge in Particle Physics are advised to acquire basic knowledge in this area before the beginning of the Master's degree programme.

1.3 Language prerequisites

¹ The teaching language of the degree programme is English.

² For admission to the degree programme, proof of sufficient knowledge of English (Level C1)² must be provided.

³ The required language certificates must be submitted by the application deadline. The ETH Zurich publishes a list of the language certificates accepted.

1.4 Performance prerequisites

Admission to the degree programme presupposes a very good study performance record in the preceding course of studies, in particular with regard to the fundamentals set out in Part 1 of the discipline requirements profile, and in the areas Electrodynamics and Quantum Mechanics (the substance of the course units Electrodynamics and Quantum Mechanics I from the ETH Bachelor's degree programme) set out in Part 2.

2 Specific stipulations for admission and entering the degree programme

2.1 General regulations

Application

All interested parties should apply through the ETH Zurich Admissions Office for admission to the programme and are subject to the admissions procedure set out in Section 3.

Entering the Master's degree programme

² Students from an ETH Bachelor's degree programme who have been granted admission can enrol in the programme once they have acquired that number of credits which would qualify them to enrol in the Master's degree programme consecutive to their original subject.⁽³⁾

² The required language level is measured according to the Common European Framework of Reference for Languages scale (CEFR).

³ The permitted number of missing credits is set out in the Study Regulations of the respective consecutive Master's degree programme (e.g., B.Sc. Physics > M.Sc. Physics).

³ For all Bachelor's degree students who are already matriculated at ETH Zurich and who progress to the ETH Master's degree programme, the following applies:

- a. The normal ETH enrolment dates and deadlines apply.
- b. Admission is provisional until the Bachelor's degree is issued. Admission will be revoked if the Bachelor's degree is not or cannot be issued.

2.3 Application with a Bachelor's degree from another university

Admission

¹ For admission to the programme all of the prerequisites set out in Section 1 must be satisfied.

Entering the Master's degree programme

² Candidates who have been granted admission may enter the programme when they have successfully completed the preceding Bachelor's degree programme.

3 Application and admission procedure

¹ All interested parties must submit an application for admission to the degree programme. The specifications for application, in particular the documents required and the dates/deadlines for submission, are published on the website of the ETH Zurich Admissions Office (www.admission.ethz.ch).

² Application may be made even if the required preceding degree has not yet been issued.

³ The admissions committee of the degree programme and the Academic Board determine how far the background of the candidate corresponds to the requirements profile and submits an application for admission/rejection to the Director of Studies.

⁴ The Rector makes the final decision regarding admission or rejection.

⁵ The candidate receives a written admissions decision.